

REMARKS

This Amendment is responsive to the Office Action dated December 14, 2004. Applicant has amended claims 1, 9-14, 21-23, 25, 29, 30, 35-37, 39 and 42. Claims 1-42 are still pending.

Amendment to the Specification

Applicant has amended the Specification, as suggested by the Examiner, in order to address a minor typographical error.

Claim Rejection Under 35 U.S.C. § 102

In the Office Action, the Examiner rejected claims 1-2, 4-6, 14, 15, 17-18, 21, 25-26, 30-32, and 36-39 under 35 U.S.C. 102(b) as being anticipated by Lipton (USPN 5,835,098); rejected claim 42 under 35 U.S.C. 102(b) as being anticipated by Swen et al. (USPN 5,806,081); rejected claims 3, 10-12, 16, 22-24, 33-34, and 40-41 under 35 U.S.C. 103(a) as being unpatentable over Lipton in view of Swen et al.; rejected claims 7, 8, 19 and 20 under 35 U.S.C. 103(a) as being unpatentable over Lipton in view of Haikin et al. (USPN 6,603,879); rejected claims 9, 13, 29, and 35 under 35 U.S.C. 103(a) as being unpatentable over Lipton in view of Yen et al. (USPN 2001/0047476); and rejected claims 27 and 28 under 35 U.S.C. 103(a) as being unpatentable over Lipton in view of "Data Embedding in Text for a Copier System", Epson Palo Alto Laboratory to Bhattacharjya and Ancin.

Applicant respectfully traverses the rejections to the extent such rejections may be considered applicable to the amended claims. The applied references fail to disclose or suggest the inventions defined by Applicant's claims, and provide no teaching that would have suggested the desirability of modification to arrive at the claimed invention.

In particular, Applicant believes that none of the applied references discloses or suggests the embedding of information describing color properties of an image within raster image data associated with the image. While some of the applied references may disclose embedding a color profile within a document, they do not suggest embedding the color profile within the raster image data associated with an image. For this reason, Applicant believes that the current rejections are improper.

Nevertheless, in order to further clarify this issue for the Examiner and even more clearly distinguish all of the applied references, Applicant has amended all pending claims to clarify that the information describing color properties is embedded in the image using steganography. This Amendment should place the application in condition for immediate allowance.

As detailed in Applicant's specification, the art of steganography is sometimes referred to as "data hiding." See page 5, lines 10-12. A number of steganography techniques have been developed, and such techniques are conventionally used for the purpose of producing "digital watermarks" for anti-counterfeiting measures. See page 5, lines 13-20.

In accordance with Applicant's amended claims, steganography is used specifically for embedding, into an image, information describing the color properties of an image. In this manner, in accordance with the invention, there is no need to provide a separate file, header, or data structure for the information. See page 6, lines 27-29. Instead, steganography allows the information to be interspersed with the raster image data of the image. See page 6, lines 29 to 31.

Nothing in the applied references discloses or suggests the features recited in the amended claims, or the desirability of modification to incorporate such features. In particular, none of the applied references discloses or suggests the use of steganography to embed information describing color properties of an image within raster image data associated with the image.

Independent claim 1 now recites a method comprising obtaining information describing color properties of a device that generates an image, and embedding the information within raster image data associated with the image using steganography such that the embedded information does not substantially affect the visual appearance of the image to a user. Thus, with respect to claim 1, the information embedded within the raster image data using steganography relates to the device that generated the image. For example, the information may comprise a device profile of the device that first rendered the image.

Independent claim 14 recites a method comprising receiving an image file of an image, the image including information describing color properties of the image embedded in raster image data of the image file using steganography, and extracting the information describing color properties of the image from the raster image data of the image file.

Independent claim 25 is directed to an image file comprising raster image data, and information embedded within the raster image data by steganography, the information describing color properties of the image, such that the embedded information does not substantially affect the visual appearance of the image to a user.

Independent claim 30 is directed to a computer readable medium carrying program code that upon execution embeds information describing color properties of a device within raster image data associated with an image using steganography such that the embedded information does not substantially affect the visual appearance of the image to a user.

Independent claim 36 is directed to a computer readable medium carrying program code that upon execution extracts information describing color properties of the image from raster image data of the image file, the information being embedded within the image using steganography.

Independent claim 39 is directed to an image acquisition device comprising memory that stores a color profile of the device, and a data embedding module that embeds the color profile in image data acquired by the device using steganography. Thus, claim 39 specifically requires that a color profile be steganographically embedded in the image data.

Independent claim 42 recites a system comprising an image acquisition device, and a host computer coupled to the image acquisition device, the host computer including a memory device that stores a color profile of the image acquisition device and a data embedding module that embeds the color profile in image data acquired by the image acquisition device using steganography. Thus, claim 42 (like claim 39) specifically requires that a color profile be steganographically embedded in the image data.

Again, conventionally, steganography is used to embed digital watermarks within images for authentication purposes, or to embed copyright ownership information within images to combat counterfeiting. In accordance with Applicant's amended claims, however, such steganography techniques are used to embed color information describing the color properties of an image or device that rendered the image directly in the raster image data of the image. This is advantageous for color rendering of the image, as the embedded color information is hidden within the raster image data for later retrieval. The prior art fails to disclose or suggest the use of

steganography to embed color information directly in the raster image data of an image, or the advantages that steganography can provide in this setting.

The Lipton reference describes the use of identifiers to specify color profiles for an image. However, neither the identifiers nor the color profiles of Lipton are embedded in an image using steganography, as required by Applicant's claims.

The Swen reference describes the embedding of a device profile in a document, but also lacks any suggestion of the use of steganography to embed such a profile into raster image data of an image file.

The Haikin and Yen references also appear to lack any teaching with respect to steganography, and clearly do not disclose or suggest the use of steganography to embed color information in the raster image data of an image.

The reference entitled "Data Embedding in Text for a Copier System" appears to describe a steganography technique that is specifically applicable to text documents. However, the steganography technique of this reference is described in the conventional context for conventional watermarking. Thus, nothing in this reference suggests that the information being encoded by the techniques is color information describing color properties of an image or a device that rendered the image. On the contrary, the document being encoded by this reference is a text document, and moreover, the information embedded therein is not color information describing color properties of an image or a device that rendered the image, as required by Applicant's claims.

In short, the applied references, both individually and collectively, fail to disclose or suggest the use of steganography to embed color information directly in the raster image data of an image, or the advantages that steganography can provide in this setting. Some of the applied references appear to describe the embedding of color profiles or indicators into a document, but lack any suggestion of stenography. Other applied references appear to discuss stenography for text documents, but describe such techniques in a conventional manner in which the information embedded by the stenography is a conventional watermark and not color information describing color properties of an image or a device that rendered the image, as required by Applicant's claims.

Nothing in any of the applied references discloses or suggests the use of steganography to embed any color information directly in the raster image data of an image.

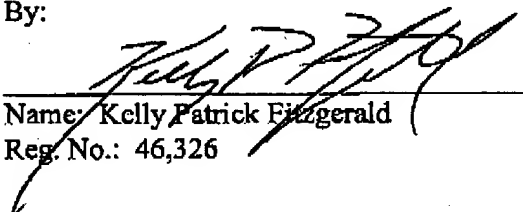
With regard to the dependent claims, Applicant reserves further comment at this time. However, Applicant does not acquiesce to any of the Examiner's rejections or characterizations of the prior art. Accordingly, Applicant reserves the right to present additional arguments with respect to the features of the pending claims.

In view of the amendments to the claims and foregoing comments, Applicant respectfully requests reconsideration by the Examiner, and allowance of all pending claims. Please charge any additional fees or credit any overpayment to deposit account number 50-1778. The Examiner is invited to telephone the below-signed attorney to discuss this application.

Date:

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SHUMAKER & SIEFFERT, P.A.
8425 Seasons Parkway, Suite 105
St. Paul, Minnesota 55125
Telephone: 651.735.1100
Facsimile: 651.735.1102

By:


Name: Kelly Patrick Fitzgerald
Reg. No.: 46,326